

FIG. 1

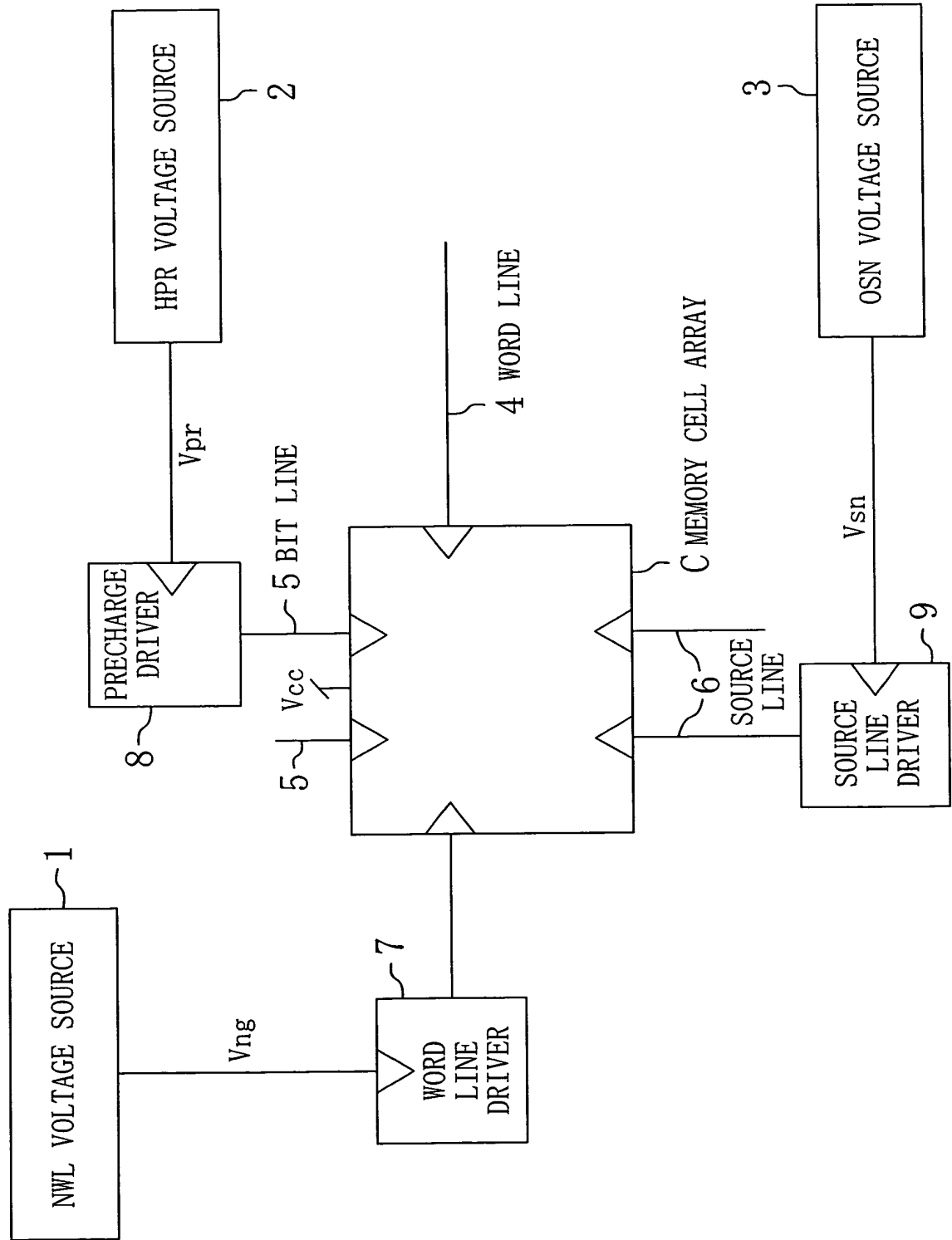


FIG. 2

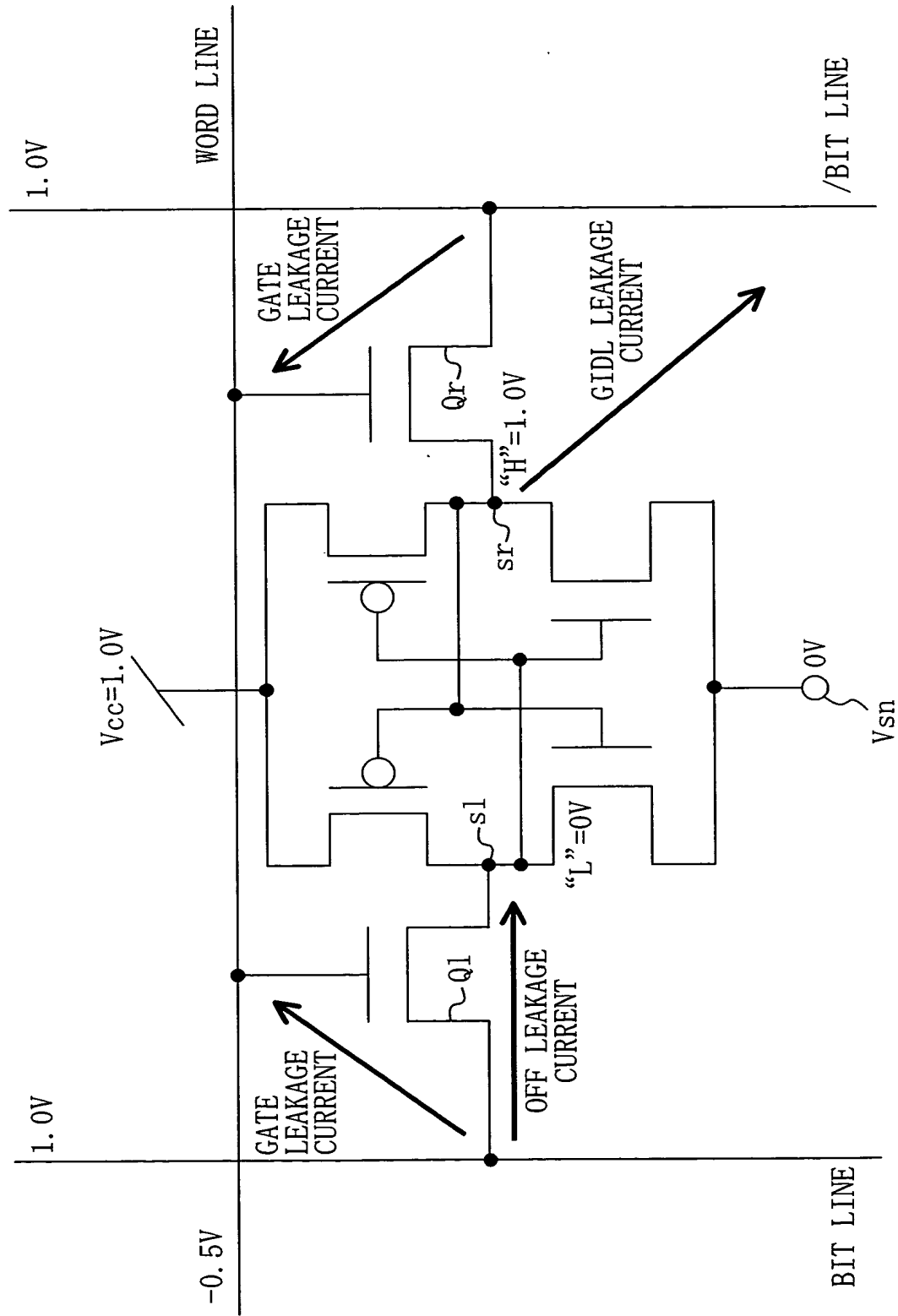


FIG. 3

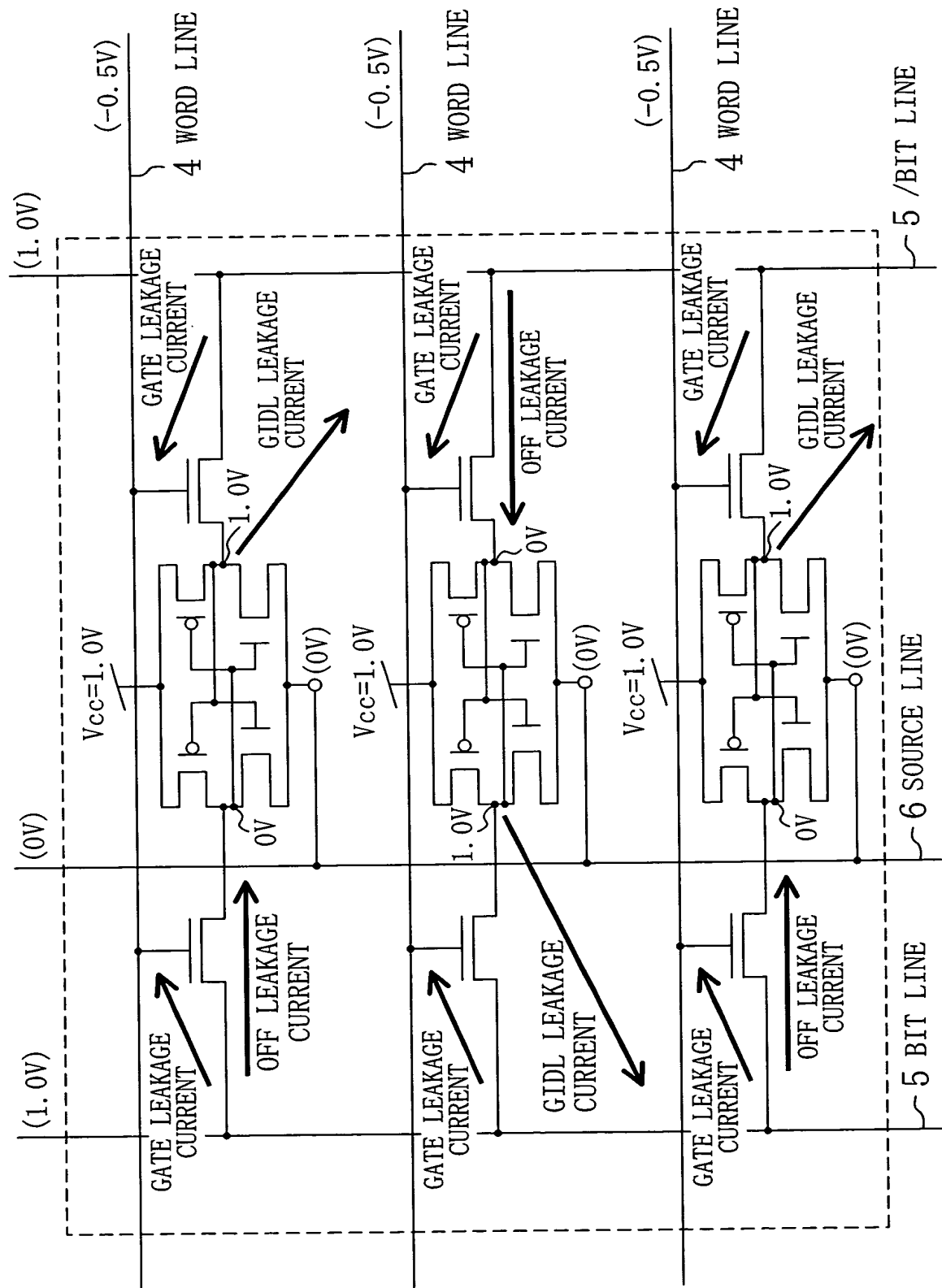


FIG. 4

NON-SELECTED WORD LINE (NWL VOLTAGE SOURCE)		LARGE NEGATIVE VOLTAGE ($-V_{cc} \sim -V_{cc}/2$)	INTERMEDIATE NEGATIVE VOLTAGE ($-V_{cc}/3 \sim -V_{cc}/4$)	SMALL NEGATIVE VOLTAGE ($-V_{cc}/6 \sim 0V$)
	OFF LEAKAGE CURRENT	VERY SMALL	INTERMEDIATE	VERY LARGE
	GATE LEAKAGE CURRENT	VERY LARGE	INTERMEDIATE	SMALL
	GIDL LEAKAGE CURRENT	VERY LARGE	INTERMEDIATE	SMALL
NON-SELECTED BIT LINE (HPR VOLTAGE SOURCE)		HIGH POTENTIAL PRECHARGE ($V_{pre}=V_{cc}$)	INTERMEDIATE POTENTIAL PRECHARGE ($V_{pre}=V_{cc}/2$)	LOW POTENTIAL PRECHARGE ($V_{pre}=V_{cc}/3 \sim 0V$)
	OFF LEAKAGE CURRENT	INTERMEDIATE	SMALL	INTERMEDIATE
	GATE LEAKAGE CURRENT	LARGE	SMALL	LARGE
	GIDL LEAKAGE CURRENT	LARGE	SMALL	LARGE
NON-SELECTED SOURCE LINE (OSN VOLTAGE SOURCE)		HIGH POTENTIAL LOW LEVEL ($V_{sn}=V_{cc}/2$)	INTERMEDIATE POTENTIAL LOW LEVEL ($V_{sn}=V_{cc}/4$)	LOW POTENTIAL LOW LEVEL ($V_{sn}=0V$)
	OFF LEAKAGE CURRENT	VERY SMALL (DATA RETENTION UNSTABLE)	INTERMEDIATE	LARGE
	GATE LEAKAGE CURRENT	UNRELATED (DATA RETENTION UNSTABLE)	UNRELATED	UNRELATED
	GIDL LEAKAGE CURRENT	VERY SMALL (DATA RETENTION UNSTABLE)	INTERMEDIATE	SMALL

FIG. 5

	STATE	VOLTAGE SOURCE	SELECTED	NON-SELECTED
DURING OPERATION	Mode-A (HIGH TEMPERATURE)	NWL VOLTAGE SOURCE (WORD LINE)	V _{cc}	-1/3 V _{cc}
		HPR VOLTAGE SOURCE (BIT LINE)	1/2 V _{cc} ~V _{cc}	1/2 V _{cc}
		OSN VOLTAGE SOURCE (SOURCE LINE)	V _{ss}	1/3 V _{cc}
	Mode-B (LOW TO ROOM TEMPERATURE)	NWL VOLTAGE SOURCE (WORD LINE)	V _{cc}	-1/4 V _{cc}
		HPR VOLTAGE SOURCE (BIT LINE)	1/2 V _{cc} ~V _{cc}	1/2 V _{cc}
		OSN VOLTAGE SOURCE (SOURCE LINE)	V _{ss}	1/4 V _{cc}
DURING STANDBY	Mode-C (HIGH TEMPERATURE)	NWL VOLTAGE SOURCE (WORD LINE)	/	-1/3 V _{cc}
		HPR VOLTAGE SOURCE (BIT LINE)		floating
		OSN VOLTAGE SOURCE (SOURCE LINE)		1/3 V _{cc}
	Mode-D (LOW TO ROOM TEMPERATURE)	NWL VOLTAGE SOURCE (WORD LINE)	/	-1/4 V _{cc}
		HPR VOLTAGE SOURCE (BIT LINE)		floating
		OSN VOLTAGE SOURCE (SOURCE LINE)		1/4 V _{cc}

FIG. 6

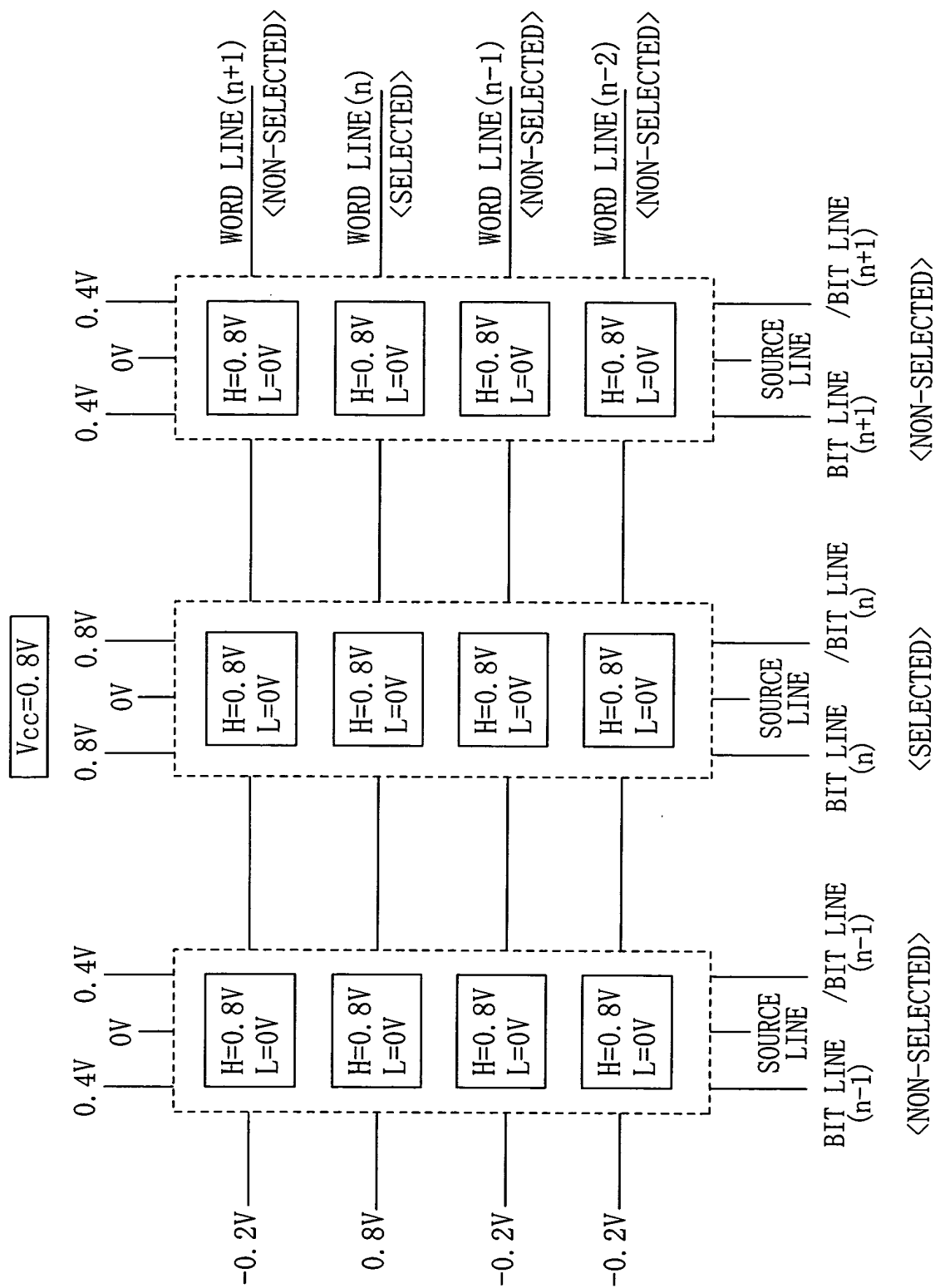


FIG. 7

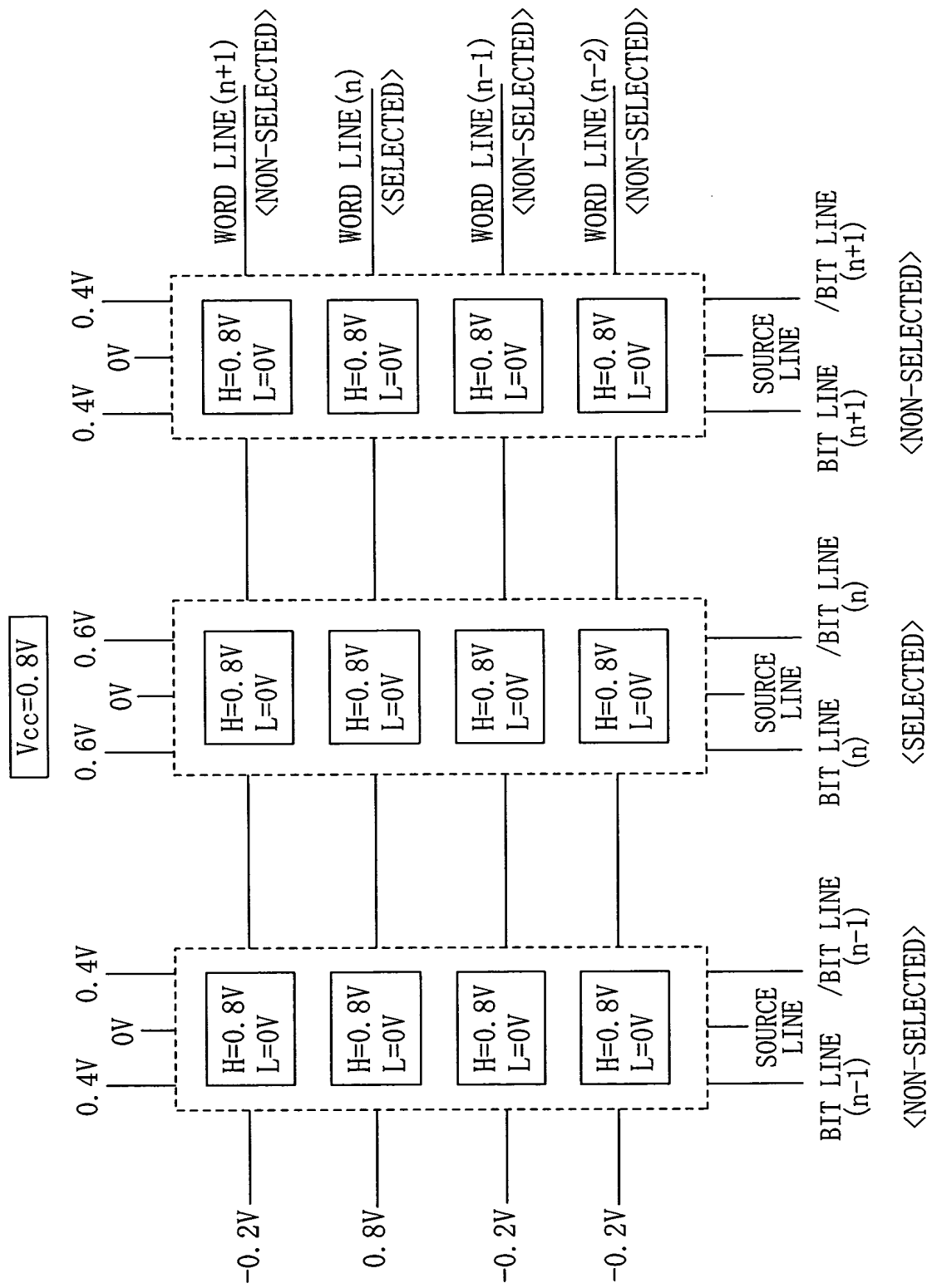


FIG. 8

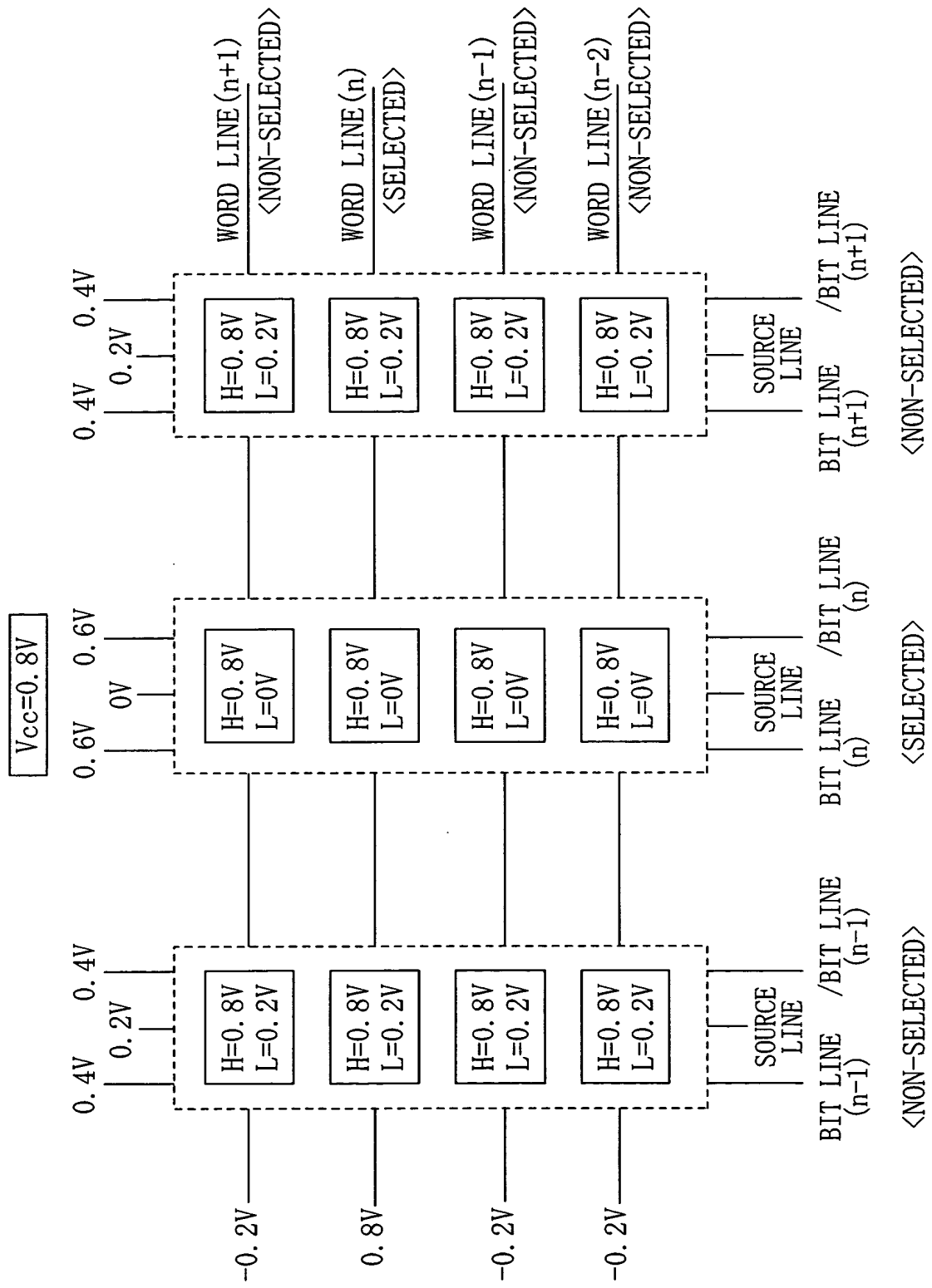


FIG. 9

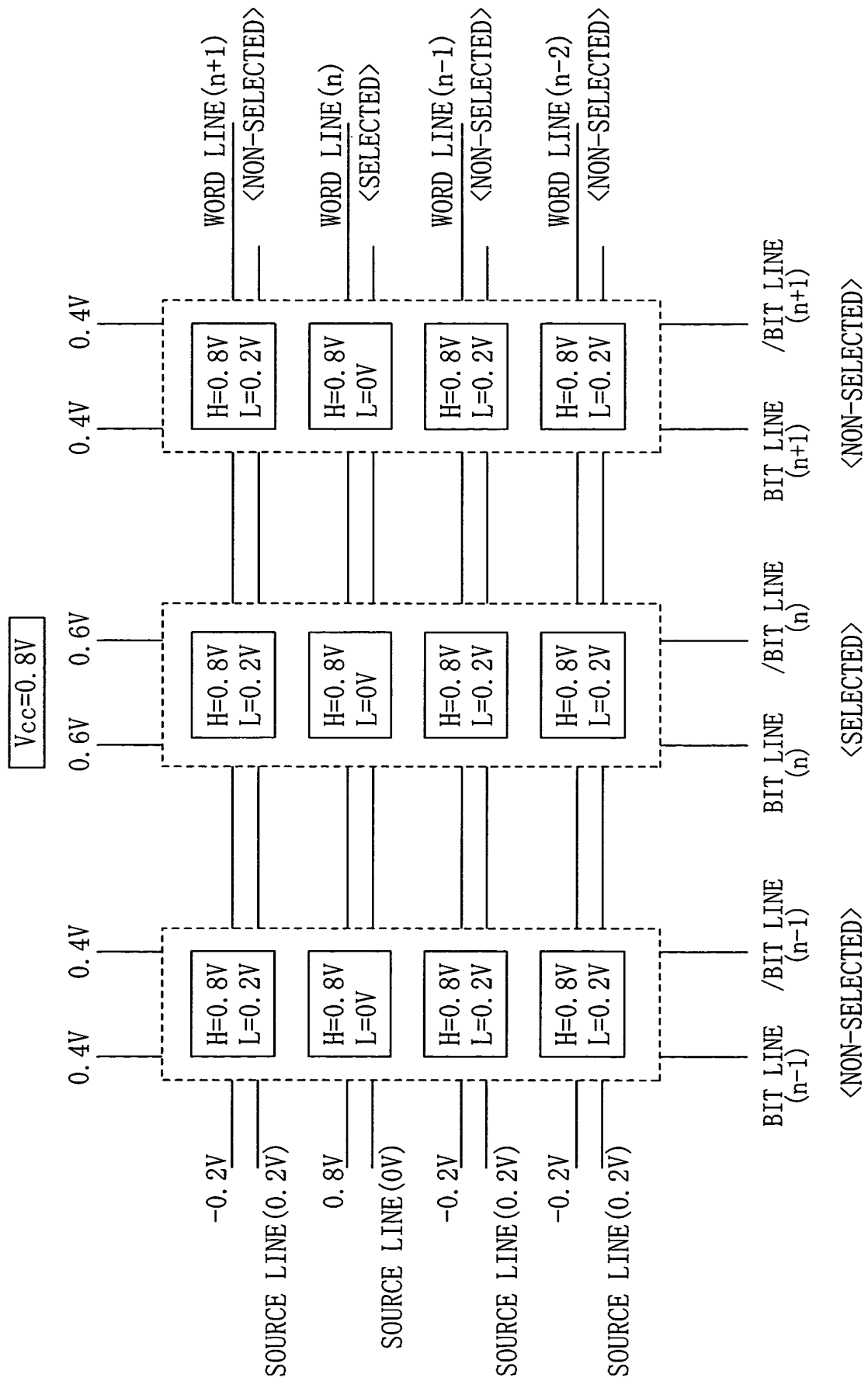


FIG. 11

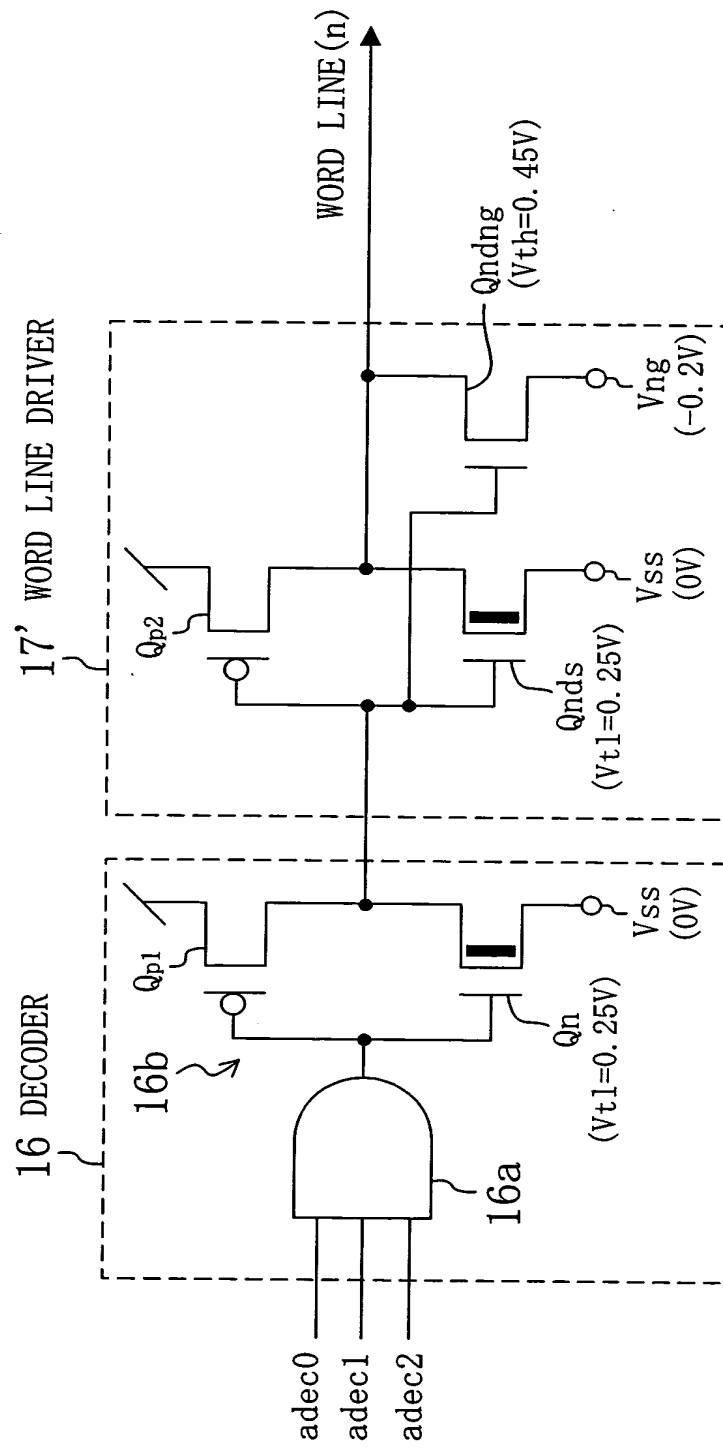


FIG. 12

